

Glossary of Terms

Term	Definition
Alluvial aquifer	An area of water-bearing sand and gravel, often found near lakes, streams and rivers. Due to their shallow and unconfined nature, alluvial aquifers are susceptible to contamination and pollution.
Annual average daily traffic (AADT)	Daily traffic volumes averaged over all 365 days in the year.
Area of Potential Effect (APE)	Geographic area likely to be affected by direct, indirect, and/or cumulative impacts of a proposed action.
Arterial	A through road or street serving major traffic movements (high-speed, high volume) for travel between major points.
At-grade intersection	A junction at which two or more roadways cross at the same level (or grade).
Attainment area	An area considered to have air quality as good as or better than the National Ambient Air Quality Standards defined in the Clean Air Act.
Auxiliary lane	A lane that extends between a freeway on-ramp and off-ramp. They are added on freeways to reduce impacts of heavy on-ramp traffic merging with a freeway through lane.
Barrier effect	The results of adding natural or man-made diversion structures that prevent a plant or animal from moving across an otherwise permeable area. Barriers can be physical obstructions that physically prevent movement (such as walls or fences), or they can be behavioral obstructions that prevent movement due to a perception of danger or risk (for example, areas with substantial human activity or habitat transitions such as a forest edge).
Best management practices	Techniques to either reduce soil erosion or remove sediment and pollutants from surface runoff.
Big box	A physically large retail establishment, usually part of a chain.
Braided flyover	A design feature where two nearly parallel ramps must cross each other and use a grade separation to avoid weaving or crossing. Most often this occurs when an on-ramp from one nearby interchange is braided to avoid interfering with an off-ramp for the next one.
Capacity	The maximum number of vehicles that can be expected to pass through a given segment of roadway or lane during a given period of time, measured in vehicles per hour or passenger cars per hour.
Clean Water Act	The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters.

Term	Definition
Cloverleaf Interchange	A highway interchange at which two highways, one crossing over the other, have a series of entrance and exit ramps resembling the outline of a four-leaf clover and enabling vehicles to proceed in either direction on either highway.
Connector	A highway or freeway road which connects to another highway or freeway. For this study, this word refers to the proposed connection between the existing Pyramid Highway and existing US 395; commonly referred to in this document as the US 395 Connector.
Criteria pollutant	A pollutant determined to be hazardous to human health and regulated under the Environmental Protection Agency's National Ambient Air Quality Standards.
Cross-section	A cross section is a vertical plane (slice) showing the various elements that make up the road and their widths. Typical roadway cross-section elements include shoulders, sidewalks, travel lanes, turn lanes, and medians.
Cultural resource	The physical remains of past human activity having demonstrable association with prehistoric or historical events, individuals, or cultural systems. Cultural resources may include archaeological sites, districts, and objects; standing historical structures, objects, or groups of resources; locations of important historic events; or places, objects, and living or nonliving things that are important to the practice and continuity of traditional cultures.
Cumulative impacts	Impacts that occur when the effects of an action are added to or interact with the effects of other human-initiated actions or natural events in a particular place and within a particular timeframe. Other known past, present, and future actions must be taken into account. Cumulative impacts combine to produce effects that are different than if each occurred in isolation. The Council on Environmental Quality (CEQ) requires that these impacts be addressed in National Environmental Policy Act documents. The study area is usually larger and the timeframe longer than for direct and indirect effect analyses.
Cuts and fills	Cut and fill areas result from earthmoving during construction. A cut is created when soil or rock material from a hill is removed for construction, and conversely, fill is created when soil or rock is added to a low area.
dB(A)	The abbreviation for the <i>A-weighted sound level</i> measured in decibels that describe a receiver's noise at a specific moment in time. The letter A indicates that the sound has been filtered to reduce the strength of very low and very high frequency sounds, much as the human ear filters sound.



Term	Definition
<i>de minimis</i>	For publicly-owned public parks, recreation areas, and wildlife and waterfowl refuges, a <i>de minimis</i> impact is one that will not adversely affect the activities, features, or attributes of the property. For historic sites, a <i>de minimis</i> impact means that the FHWA has determined (in accordance with 36 Code of Federal Regulations Part 800) that either no historic property is affected by the project or that the project will have “no adverse effect” on the historic property.
Decibel	The unit used to measure the intensity of a sound.
Design Speed	The maximum speed at which a vehicle can be operated safely on a road in perfect conditions.
Detention basins	A facility that collects storm runoff and is designed to protect against flooding and, in some cases, downstream erosion by storing water for a limited period of a time.
Dewater	Remove water during construction activities, such as bridge construction, tunneling, or utility relocation.
Diamond-type interchange	A common type of road junction, used where a freeway crosses a minor road. The freeway itself is grade-separated from the minor road, one crossing the other over a bridge. Approaching the interchange from either direction, an off-ramp diverges only slightly from the freeway and runs directly across the minor road, becoming an on-ramp that returns to the freeway in similar fashion, giving the interchange a diamond shape when viewed from above.
Direct impact	Impacts which are experienced immediately due to project implementation.
Directional interchange	An interchange where one or more left-turning movements are provided by direct connection, even if the minor left-turn movements are accommodated on loops.
Directional system interchange	A directional interchange that connects freeways to freeways.
Effluent	Wastewater (treated or untreated) that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.
Energy consumption	The use of energy to power engines, machines, or buildings. Vehicle energy consumption is affected by the type of vehicle using the roadway, the travel speed, geometry, congestion, and condition of the road.
Entrenched channel	An area that contains continuously or periodically flowing water that is confined by banks and a streambed. An entrenched channel usually has a relatively narrow width with little or no flood plain and often has meanders worn into the landscape.

Term	Definition
Environmental Justice	The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
Environmentally Preferred Alternative	Under NEPA regulations, the agency must identify the “environmentally preferable alternative” in the Record of Decision. The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.
Expansive soil and rock	Soil and rock composed entirely or in part of clay or claystone. Expansive soils swell when wet.
Fat line	Used during the Level 2AB screening, fat line concepts were more detailed than the concepts presented in the Level 1 screening.
Fen	Wetlands with a highly organic upper soil horizon (more than 12 percent organic matter).
Floodplain	An area adjacent to a stream or river that is inundated periodically by high volume flows.
Forest Service Sensitive Species	Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by: a) Significant current or predicted downward trends in population numbers or density; b) Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution
Freeway	A divided arterial highway designed for the unimpeded flow of large traffic volumes. Access to a freeway is rigorously controlled and intersection grade separations are required.
Frequent service	Bus systems with a lower capacity per vehicle need to provide more frequent services. This leads to a relatively good timing availability of bus systems in comparison to higher capacity rail systems.
Frontage roads	A frontage road (also access road, service road, and many other names) is a road running parallel to a higher-speed road, usually a freeway, and feeding it at appropriate points of access (interchanges).
Fugitive dust	A type of nonpoint source air pollution that does not originate from a specific point. Fugitive dust originates in small quantities over large areas. Significant sources include unpaved roads, agricultural cropland, and construction sites.
Geographic Information System (GIS)	A computerized data management system designed to capture, store, retrieve, analyze, and display geographically referenced information. An environmental inventory is a collection of GIS data pertaining to a geographic area, and it can be used in environmental analysis and documentation for highway projects.



Term	Definition
Geologic hazard	A naturally occurring or man-made geologic condition or phenomenon that presents a risk or potential danger to life and property. Examples include landslides, flooding, earthquakes, ground subsidence, faulting, dam leakage and failure, mining disasters, pollution, and waste disposal.
Geologic units	A volume of a certain kind of rock of a given age range. Geologic units of different ages usually appear in different shades of color on a map
Geomorphology	The science that treats the general configuration of the Earth's surface; specifically, the study of the classification, description, nature, origin, and development of present landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features.
Grade-separated junction	An intersection where one road passes over another road on a bridge. Adding ramps to a grade separation, providing access from one road to another, creates an interchange.
Greenhouse gas emissions	The physical and chemical reactions that release gases into the atmosphere through natural and human-made processes. Some natural sources of greenhouse gas emissions include water vapor, carbon dioxide, and methane. Some sources of human-made greenhouse gas emissions include the combustion of fossil fuels, deforestation, livestock, and agricultural activities.
Gross Regional Product	One of several measures used to estimate the size of a metropolitan area's economy. The market value of all final goods and services produced within a metropolitan area in a given period of time.
High-speed interchange	An interchange designed for speeds over 50 miles per hour.
Historic property	A legal term that refers specifically to any property (historic or prehistoric) listed on or eligible for inclusion in the National Register of Historic Places (National Register). A historic property can be an archaeological site, a historic site, or a traditional use area. Not all such sites meet the specific National Register criteria for historic property designation.
Horizontal and vertical geometry	Horizontal geometry is the proposed roadway in two dimensions. Vertical geometry includes elevation, providing a three-dimensional section of roadway.
HOV/HOT lanes	An HOV lane is an exclusive traffic lane or facility limited to carrying high occupancy vehicles (HOVs) and certain other qualified vehicles. An HOV is a passenger vehicle carrying more than a specified minimum number of passengers (for example, an automobile carrying more than one or more than two people). HOVs include carpools and vanpool as well as buses. A High Occupancy Toll (HOT) lane is an HOV facility that allows lower occupancy vehicles (that is, solo drivers) to use these facilities in return for toll payments, which could vary by time-of-day or level of congestion.
Hydrophytic	A plant adapted to grow in water.

Term	Definition
Impervious surface	A surface that does not absorb fluids, such as pavements (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone-and rooftops
Indirect impact	An impact that is reasonably foreseeable and caused by a project, but occur at a different time or place.
Induced growth	Land development or economic growth that occurs in response to changes in the natural or built environment, such as changes to a transportation facility.
Intelligent Transportation Systems	The application of advanced technologies to improve the safety and efficiency of transportation systems by providing information to users so they can be better informed and make safer, more coordinated, and 'smarter' use of transport networks.
Intersection approach	Roads leading to an intersection of other roads.
Jurisdictional wetland	Jurisdictional wetlands are those that are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act.
Kilowatts (or kilowatt-hours)	A unit of energy equal to 1,000 watts. A kilowatt is used to quantify the energy output or energy consumption of engines or machines. One kilowatt is approximately equivalent to 1.34 horsepower.
Level of Service (LOS)	A qualitative measure of the operational characteristics of a traffic stream, ranked from A (best) to F (worst). LOS is described in terms of speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.
Life zones	A geographic region or area defined by its characteristic life forms that are usually delineated by latitudes.
Limited access freeway	A limited-access or controlled-access highway may be defined as a highway especially designed to expedite and control through traffic, primarily by means of median dividers or strips, elimination of grade level intersections.
Loudest hour	Noise impacts are defined by loudest hour equivalent noise levels (Leq) that approach or exceed FHWA Noise Abatement Criteria (NAC) values for the appropriate Activity Category.
Low-income population	Low-income populations are defined using income limits set annually by the U.S. Department of Housing and Urban Development (HUD), which considers individuals and households earning less than 30 percent of the area median income of a community to be low-income. Income limits are adjusted for household size to establish county-specific low-income thresholds.
Macroinvertebrates	Invertebrates visible to the naked eye, such as insect larvae and crayfish.
Maintenance area	An area in compliance with the National Ambient Air Quality Standards for the criteria pollutants designated in the Clean Air Act.



Term	Definition
Management Indicator Species	Animals or plants selected because changes in their population respond to the effects of Forest Service management activities. The Management Indicator Species list is one of the many tools the United States Forest Service uses to provide for the diversity of plant and animal communities and to gauge the effects of management activities.
Management prescription area	Specific geographical areas defined by a forest plan. Each management area has a set of objectives, allowable land uses, and characteristics unique to it.
Median stations	Bus rapid transit center median station with dual outside platforms located in the median at the far side of an intersection.
Minority population	Minorities are defined as persons who are Black, Hispanic, Asian American, or Native American Indian or Alaskan.
Mitigation measure	Action developed in response to an impact identified in the analysis that could be taken to avoid, reduce, or compensate for the projected impact. Usually includes appropriate monitoring and enforcement activities to comply with NEPA's intent.
Mobile Source Air Toxics	Compounds emitted from highway vehicles and nonroad equipment that are known or suspected to cause cancer or other serious health and environmental effects.
MOBILE6	An emission factor model that the Environmental Protection Agency uses for predicting gram per mile emissions of hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO _x), carbon dioxide (CO ₂), particulate matter (PM), and toxics from cars, trucks, and motorcycles under various conditions.
Mobility	The ability of traffic or other travel modes to move unimpeded through a highway or other transportation facility.
Multimodal	Involving various modes of highway and non-highway transportation, such as rail, transit, walking, and bicycling
National Ambient Air Quality Standards	The maximum permissible concentrations for certain pollutants, known as criteria pollutants, which include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO ₂), particulate matter (PM ₁₀ and PM _{2.5}), ozone (O ₃), and sulfur dioxide (SO ₂).
National Environmental Policy Act (NEPA)	The National Environmental Policy Act of 1969 establishes policy, sets goals, and provides means for the protection of the environment in federal decision-making. Under NEPA, all federal agencies must consider the environmental impacts of any proposed action that includes federal money or affects federal land and public input in relevant decisions.
National Register of Historic Places	The National Register of Historic Places is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. Properties listed or eligible for listing in the National Register of Historic Places meet defined criteria and are significant to the history of their community state, or the nation.

Term	Definition
Noise abatement criteria	Noise levels measured in decibels that are used as a basis of comparison for evaluating the impact from predicted design year noise and for determining whether noise abatement measures should be considered.
Noise receptor	Locations that may be affected by noise
Nonattainment area	A geographic area in which the level of air pollution is higher than the level allowed by nationally accepted standards for one or more pollutants.
Nonjurisdictional wetland	Wetlands not under the jurisdiction of the U.S. Army Corps of Engineers. See Jurisdictional Wetland .
Nonpoint source pollution	Pollution that originates from diffuse areas and unidentifiable sources. Common non-point sources are agriculture, forestry, the atmosphere, ground water, city streets, mining, construction, dams, channels, landfills, and saltwater intrusion.
Noxious weeds	An alien plant or parts of an alien plant that have been designated by rule as being noxious or has been declared a noxious weed by a local advisory board, and meets one or more of the following criteria: <ol style="list-style-type: none"> 1. Aggressively invades or is detrimental to economic crops or native plant communities; 2. Is poisonous to livestock; 3. Is a carrier of detrimental insects, diseases, or parasites; and 4. Is detrimental to the environmentally sound management of natural or agricultural ecosystems due to the direct or indirect effect of the presence of this plant.
Off-alignment	As used in the EIS, this refers to an alternative that is located, at least partially, away from the existing alignment of Pyramid Highway.
On-alignment	As used in the EIS, this refers to an alternative that is located along the existing alignment of Pyramid Highway.
Operational energy	The energy consumed by vehicles once a highway is constructed that is dependent on the fleet make-up and projected traffic volumes.
Out-of-direction	Out-of-direction travel occurs on a trip that includes a route that points away from their destination, due to connectivity or road closure circumstances.
Overall intersection	Refers to an intersection as a whole.
Palustrine emergent	Relates to a system of inland, nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface).
Peak hour	The hour in which the maximum traffic demand occurs on a roadway facility. On most roads during weekdays, higher traffic volumes occur in the morning and in the evening because of work-related trips.
Pier	In engineering, a term applied to a mass of reinforced concrete or masonry supporting a large structure, such as a bridge.



Term	Definition
Point source pollution	Any single identifiable source of pollution from which pollutants are discharged, such as a pipe, ditch, ship, or factory smokestack.
Preferred Alternative	The "agency's preferred alternative" is the alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors.
Queue jump	A queue jump is a type of roadway geometry used to provide preference to buses at intersections, often found in bus rapid transit systems. It consists of an additional travel lane on the approach to a signalized intersection. This lane is often restricted to transit vehicles only. A queue jump lane is usually accompanied by a signal that provides a phase specifically for vehicles within the queue jump. Vehicles in the queue jump lane get a "head-start" over other queued vehicles and can therefore merge into the regular travel lanes immediately beyond the signal.
Ramp meter	A traffic signal located at the on-ramp to a highway to control the flow rate of vehicles entering the highway. A ramp meter controls the frequency and spacing of merging vehicles, which helps to improve the traffic flow on the highway.
Ramp terminal	Location where highway ramps end in an intersection.
Rapid subsidence	The accelerated downward settling or sinking of land with little or no horizontal motion.
Record of Decision	The Record of Decision is the final step for agencies in the EIS process. The Record of Decision is a document that states what the decision is; identifies the alternatives considered, including the environmentally preferred alternative; and discusses mitigation plans, including any enforcement and monitoring commitments.
Redoximorphic	Features formed by the reduction, translocation, and oxidation of iron and manganese. Both iron and manganese are used because the two are virtually inseparable in soils. Redoximorphic features are large enough to be seen with the naked eye.
Re-entrained dust	Material re-suspended in the air by vehicles traveling on unpaved and paved roads. Re-entrained dust on road and pavement surfaces arises from winter sanding, vehicle tires tracking soil from unpaved roads, the erosion of the road surface itself, and the degradation of parts of the vehicle, especially the tires.
Regulated materials	The generation, storage, disposal, and release of any hazardous substance or petroleum product that falls within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Properties contaminated by hazardous waste or petroleum products, highway accidents that potentially release environmental contaminants into adjacent land and streams; and potential contamination from mine tailings and wastes from historic mines are examples of regulated materials.
Right-of-way	The land owned or acquired for highway operations and maintenance.

Term	Definition
Riparian	Of, on, or relating to the banks of a river, stream, or drainageway.
Scoping	An early step in the NEPA process that includes seeking agency and public views and information, receiving comments and suggestions, and determining issues to evaluate during the environmental analysis. Scoping can involve public meetings, telephone conversations, or written correspondence.
Screening (alternatives analysis)	A systematic process in which a broad range of alternatives is narrowed down to those that best meet the goals of a project based on the project's purpose and need, as well as focus on key issues and concerns related to the study area.
Section 106 of the National Historic Preservation Act	Section 106 of the National Historic Preservation Act requires federal agencies to define and document the resources listed on or eligible for the National Register of Historic Places located within the Area of Potential Effects (APE), in consultation with the State Historic Preservation Office (SHPO), to determine the effects of the proposed project on them.
Section 4(f)	Properties that are defined under Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303). Department of Transportation (DOT) regulations explicitly state that the Secretary of Transportation cannot approve the acquisition of publicly-owned land from a park, recreation area, or wildlife refuge, or land from a national, state, or local historic site unless no feasible and prudent alternative exists. These properties are commonly referred to as 4(f) properties.
Section 404	Section 404 of the Clean Water Act requires permits for any discharge of dredged or fill material into the aquatic ecosystem, including wetlands. Impacted ecosystems must be mitigated and monitored according to the Clean Water Act.
Section 6(f)	Properties that are defined under Section 6(f)(3) of the Land and Water Conservation Fund Act signed into law on September 3, 1964. These properties consist of publicly-owned land, including parks and recreation areas purchased or improved with monies from the Land and Water Conservation Fund, and are intended to remain in use for public recreation in perpetuity.
Sedimentation	The deposition of soil or mineral particles, usually into a water body or drainage.
Seeps	A place where groundwater flows slowly to the surface and often forms a pool; a small spring. Seeps are usually not flowing, with the liquid sourced only from underground. Seeps are often used in environmental sciences to define an exfiltration zone (seepage zone) where contaminated water from waste dumps or other sources leaves a waste system.
Service interchange	A service interchange is an interchange between a freeway or controlled access facility and a lower class roadway such as an arterial or collector road. Main purpose is to provide nearby land access.



Term	Definition
Set back	Setbacks form boundaries by establishing an exact distance from a fixed point, such as a property line or an adjacent structure, within which building is prohibited.
Signal priority	Often an element of Bus Rapid Transit (BRT), signal priority is the designing of traffic signals to turn green as transit vehicles approach.
Slip ramp	A diagonal ramp, more properly called a cross connection, which connects with a parallel frontage road.
Special management area	Public lands with federal management prescriptions that favor wildlife and their habitats because of limits they impose in some way on human activities.
Split diamond interchange	Where several roads need to be connected to the same freeway, but they are too close together two diamond interchanges are used and connected with one way frontage roads.
State Transportation Improvement Plan	A plan that establishes state transportation spending for a period of six years.
Superfund site	A site contaminated by hazardous waste and identified by the Environmental Protection Agency as a candidate for cleanup because it poses a risk to human health and/or the environment.
Suppressed growth	The inhibition, or suppression, of land development or economic growth due to conditions in the natural or built environment.
Sustainability	Accommodating the needs of the present population without compromising the ability of future generations to meet their own needs.
System interchange	An interchange that connects freeways to freeways.
Threatened and endangered species	A classification of plant and animal species listed in the Endangered Species Act.
Total maximum daily load	A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards.
Total suspended solids (TSS)	Particles, both mineral (clay and sand) and organic (algae and small pieces of decomposed plant and animal material), that are suspended in water.
Traffic noise model (TNM)	A traffic noise prediction model designed, developed, tested and documented by the Federal Highway Administration.
Transportation System Management (TSM)	Actions that improve the operation and coordination of existing transportation services and facilities, such as ramp metering.
Transportation/Travel Demand Management (TDM)	Programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telecommuting, and alternative work hours.

Term	Definition
TWLT lane	Two-way, left-turn lane. This is a center lane that serves as a left-turn lane for both directions of travel.
Unmet demand	A situation that occurs when travelers choose to not make a trip or avoid a desired trip because of severe congestion conditions, long travel times, or other unsatisfactory conditions.
Vehicle mile of travel (VMT)	A unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.
Vehicles per day (vpd)	This is a measure of traffic volume and is used as the unit for Average Annual Daily Traffic.
Vehicles per hour (vph)	The number of vehicle passing a specific point in one hour.
Viewshed	An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point, often from public areas such as from public roadways or public parks.
Vividness / intactness / unity	<p>A set of criteria used to rank visual quality, as described below:</p> <ul style="list-style-type: none"> • Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns. • Intactness is the visual integrity of the natural and human-made landscape of the immediate environs and its freedom from encroaching elements. • Unity is the visual coherence and compositional harmony of the landscape considered as a whole.
Waters of the U.S.	Section 404 of the Clean Water Act defines waters of the U.S. as all traditional navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters.
Watershed	The areas that drain to surface water bodies, including lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape.
Wetland	Wetlands consist of areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.